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FIG. 5 illustrates an alternate embodiment of the subject invention in the form of apparatus shown generally at 48. Sheath 50 of said device is preferably made from a helically wire wound member to provide a measure of shielding for the radioactive dose means. Device 48 includes positioning means 52 which is a motion wire providing slidable motion of the radioactive dose means 54 within the sheath. Radioactive dose means 54 is thus positionable proximate to the lesion site 56 of artery segment 58 in a deployed configuration and retractable within sheath 50 in a non-deployed configuration for insertion and removal within the artery segment 58.

In the Claims:

Please cancel Claim 18 without prejudice or disclaimer of the subject matter contained there.

Please amend Claims 6, 10, and 17 as follows:

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6. Apparatus for post-treatment of a stenosed region of an artery that has been reduced by angioplasty or other procedure comprising:
radioactive dose means for emitting radiation;
a device positioned in spaced relation to the dose means; and
positioning means operatively connected to said device for advancing said device and dose means within the stenosed region of an artery that has been reduced by angioplasty or other procedure, said positioning means also being operatively connected to said device and dose means for positioning the device and dose means between a first position and a second position, wherein in the first position the dose means is positioned within the stenosed region of the artery in a non-deployed configuration and a second position wherein the dose means is in a deployed configuration for treating at least a portion of the stenosed region of the artery, said positioning means being operatively connected to said device and dose means for withdrawing said device and dose means from the artery

after said radioactive dose means is exposed to the stenosed region for a period of time sufficient to reduce restenosis of the stenosed region.

7. The apparatus of Claim 6, wherein the dose means is in solid form.
8. The apparatus of Claim 6, wherein the dose means is in liquid form.
9. The apparatus of Claim 6, wherein the dose means is in gaseous form.

10. Apparatus for post treatment of a stenosed region of an artery that has been reduced by angioplasty or other procedure comprising:
a radiation source; and
a catheter having at least one lumen adapted to deliver said radiation source within the stenosed region of an artery that has been reduced by angioplasty or other procedure, said catheter also being adapted to at least partially reposition relative to the radiation source for treatment when positioned within the stenosed region of an artery, the catheter being adapted to at least partially reposition to withdraw said radiation source from the artery after said radiation source is exposed to the stenosed region for a period of time sufficient to reduce restenosis of the stenosed region.

11. The apparatus of Claim 10, wherein the radiation source is in solid form.
12. The apparatus of Claim 10, wherein the radiation source is in a liquid form.
13. The apparatus of Claim 10, wherein the radiation source is in gaseous form.
14. The apparatus of Claim 10, wherein the catheter includes a balloon, the catheter defining at least one hole distal to the balloon and at least one hole proximal to the balloon.

15. The apparatus of Claim 14, wherein the catheter includes a first lumen in fluid communication with the balloon.

16. The apparatus of Claim 15, wherein the catheter defines a plurality of perfusion holes and includes a second lumen in fluid communication with perfusion holes which allow perfusion of blood in the artery during inflation of the balloon.

17. The apparatus of Claim 10, wherein the radiation source provides a radiation dose to the stenosed region through a window in the catheter.

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19. The apparatus of Claim 10, wherein the catheter includes a balloon capable of reducing the stenosed region and simultaneously performing the post-treatment by forcing a balloon into contact with a lesion, the balloon being inflated by a fluid having the radiation dose means incorporated therein.

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20. The apparatus of Claim 6, wherein the radioactive dose means for emitting radiation is positioned within the device, the device defining a housing, wherein in the first position the dose means is shielded from treating the stenosed region and in the second position the housing is deployed to at least partially expose the dose means to the stenosed region of the artery.

21. The apparatus of Claim 20, wherein in the second deployed position a sheath is withdrawn relative to the dose means positioned in the stenosed region to expose the stenosed region to the dose means.

23. The apparatus of Claim 20, wherein the housing defines a window and a cover for the window such that in the second position the window is open and exposing the stenosed region to the dose means.

24. The apparatus of Claim 10, wherein the catheter includes a balloon with radioactive dose means for emitting radiation incorporated into and enclosed within the material of the balloon and the balloon is expanded in the second deployed configuration positioning the balloon at least partially in contact with the stenosed region of the artery.

25. The apparatus of Claim 24, wherein the portion of the device that is expanded includes a balloon with the dose means positioned on the surface of the balloon.

28. The apparatus for post-treatment of a stenosed region of Claim 17, wherein the dose means is a liquid.

29. The apparatus for post-treatment of a stenosed region of Claim 17, wherein the dose means is a gas.

30. The apparatus for post-treatment of a stenosed region of Claim 24, wherein the dose means incorporated into the balloon material is a solid.

31. The apparatus for post-treatment of a stenosed region of Claim 24, wherein the dose means incorporated into the balloon material is a liquid.

32. The apparatus for post-treatment of a stenosed region of Claim 24, wherein the dose means incorporated into the balloon material is a gas.

33. The apparatus for post-treatment of a stenosed region of Claim 23, wherein the apparatus controls the exposure of the dose means by controlling the radial direction and axial position of the window.

Please add Claims 34-40 as follows.

Sub 3 34. Apparatus for post-treatment of a stenosed region of an artery that has been reduced by angioplasty or other procedure comprising:
radioactive dose means for emitting radiation;
a device movable with respect to the dose means; and
positioning means configured to advance said device and dose means within the stenosed region of an artery that has been reduced by angioplasty or other procedure, said positioning means also configured position the device and dose means between a first position and a second position, wherein in the first position the dose means is positioned within the stenosed region of the artery in a non-deployed configuration and a second position wherein the dose means is in a deployed configuration for treating at least a portion of the stenosed region of the artery, said positioning means configured to withdraw said device and dose means from the artery after said radioactive dose means is exposed to the stenosed region for a period of time sufficient to reduce restenosis of the stenosed region.

35. The apparatus of Claim 34, wherein the dose means is in solid form.

36. The apparatus of Claim 34, wherein the dose means is in liquid form.

37. The apparatus of Claim 34, wherein the dose means is in gaseous form.

38. The apparatus of Claim 34, wherein the radioactive dose means for emitting radiation is positioned within the device, the device defining a housing, wherein in the first position the dose means is shielded from treating the stenosed region and in the second position the housing is deployed to at least partially expose the dose means to the stenosed region of the artery.

39. The apparatus of Claim 38, wherein in the second deployed position a sheath is withdrawn relative to the dose means positioned in the stenosed region to expose the stenosed region to the dose means.

40. The apparatus of Claim 38, wherein the housing defines a window and a cover for the window such that in the second position the window is open and exposing the stenosed region to the dose means.

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